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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/678,599	10/03/2003	Robert C. Lam	01239/01092	6145

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BORGWARNER INC.  
PATENT DEPARTMENT  
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EXAMINER
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STEELE, JENNIFER A

ART UNIT	PAPER NUMBER
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1771

DATE MAILED: 11/16/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/678,599

Applicant(s)

LAM ET AL.

Examiner

Jennifer Steele

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,2,4 and 6-19 is/are pending in the application.
- 4a) Of the above claim(s) 20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,4,6,8-19 is/are rejected.
- 7) ☒ Claim(s) 7 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____                                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date ____   | 6) <input type="checkbox"/> Other: ____                           |

## **NON-FINAL OFFICE ACTION**

### ***Claim Rejections - 35 USC § 112***

1. Claim 7 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 7 refers to the friction material of cancelled claim 3.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
  2. Ascertaining the differences between the prior art and the claims at issue.
  3. Resolving the level of ordinary skill in the pertinent art.
  4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
2. Claim 1, 2, 4, 6, 8-19 rejected under 35 U.S.C. 103(a) as being obvious over Chen et al EP 1203897. Chen teaches a friction material comprising a fibrous base material impregnated with a curable resin, a fibrous base material comprising a porous primary layer and a secondary layer. Chen teaches a secondary layer comprising

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friction modifying particles comprising silica. Chen differs from the claimed invention because Chen does not teach that the secondary layer comprises a mixture of 20-35% silica and 65-80% carbon. The current application claims a friction material with a secondary layer of friction modifying particles of a mixture of 20-35% silica and 65-80% carbon. Chen does not teach the composition of the friction particles in the secondary layer, however, the Chen claim 5 teaches friction modifying particles comprising silica particles; resin powders; carbonized carbon powder or particles and mixtures thereof; and mixtures thereof. Chen's specification, pg 7 lines 11-17 teach the various friction modifying particles that are useful as the secondary layer on the fibrous base material that include silica and carbon as in claim 1 of the current application. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have employed a mixture because Chen teaches putting friction modifying particles in the secondary layer, and teaches that silica and carbon and mixtures thereof are suitable for use as fiction modifying particles. One of ordinary skill in the art would have been motivated to employ a mixture because Chen teaches the advantages of silica and carbon as friction modifying particles. It further would have been obvious to have selected the appropriate amounts of the two particles through the process of routine experimentation to obtain optimum friction properties.

3. Claim 1, 2, 4, 6, 8-19 rejected under 35 U.S.C. 103(a) as being obvious over Lam et al US Patent 5998307 in view of Chen et al EP 1203897. Lam teaches a friction material comprising a fibrous base material impregnated with a curable resin, a fibrous base material comprising a porous primary layer and a secondary layer. Lam teaches a

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secondary layer comprising friction-modifying particles comprising carbon particles.

Lam differs from the claimed invention because Lam does not teach that the secondary layer comprising a mixture of 20-35% silica and 65-80% carbon. The current application claims a friction material with a secondary layer of friction modifying particles of a mixture of 20-35% silica and 65-80% carbon. Chen teaches a secondary layer comprising friction-modifying particles comprising silica. It would have been obvious at the time of the invention to one of ordinary skill in the art to employ a mixture of silica and carbon because Lam teaches carbon as friction modifying particles (col 3 lines 40-44) and Chen teaches silica as a friction-modifying particle. One of ordinary skill in the art would have been motivated to employ a mixture because Lam and Chen teach the advantages of silica and carbon as friction modifying particles. It further would have been obvious to select the appropriate amounts of the two particles through the process of routine experimentation to obtain optimum friction properties.

4. With regard to claim 17, Chen teaches fibrillated aramid fibers having a freeness of about 430 to about 650 on the CSF index in claim 7 and at least about 300 in claim 6. The current application teaches aramid fibers having a freeness of about 350 to about 650 on the Canadian Standard Freeness index. It would have been obvious to one of ordinary skill in the art at the time of the invention to use aramid fibers in the range of 350 to 650 CSF index.

5. With regard to claims 11 and 16, Chen teaches fibrillated aramid fibers having a freeness of about 430 to about 650 on the CSF index in claim 7 and at least about 300 in claim 6. The current application requires the CSF index be greater than 430 and less

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than 640 for the fibrous base material. It would have been obvious to one of ordinary skill in the art at the time of the invention to use aramid fiber in the range of 350 to 650 CSF index.

6. Claims 1, 2, 4, 6, 8-19 are rejected 35 U.S.C. 103(a) as being obvious over Chen and Lam. Chen teaches a friction material with a secondary layer containing friction particles of silica and Lam teaches a friction material with a secondary layer containing friction particles of carbon. Chen teaches the use of silica and carbon particles and mixtures thereof but does not specify a composition of a mixture. Chen also teaches the benefits and detriments of silica and carbon. The silica particles are inexpensive which bond strongly (Chen EP 1203897 pg 7 lines 15-17). The carbon particles provide the friction material with good friction characteristics such as a good or smooth "feel" in shift and essentially noise or "squawk" free operation of the brakes and clutches. However the carbon particles require a retention aid as they do not adhere well. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to have combined the silica and carbon particles in the secondary layer of the friction material motivated by the expectation to gain benefits of both silica and carbon as friction modifying particles. It further would have been obvious to have selected the appropriate amounts of the two particles through the process of routine experimentation in order to arrive at a product having the optimum friction properties.

***Claim Rejections - 35 USC § 103***

7. Claims 1,2,4,6,8-19 rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 6630416 to Lam et al as applied under 35 U.S.C. 102(f) substantially as set forth in the previous action. The '416 reference teaches silica and carbon particles as friction modifying particles, the reference is silent with respect to the amount of each. Therefore, absent of showing of unexpected results with the specifically claimed mounts, no patentable distinction is seen between the claimed invention and what would have been obvious to one of ordinary skill in the art, and it therefore would have been obvious to one of ordinary skill in the art at the time the invention was made to have selected the particular amounts of carbon and silica particles through the process of routine experimentation in order to arrive at a product having the optimum friction properties.

8. Applicant has provided evidence in this file showing that the invention was owned by, or subject to an obligation of assignment to, the same entity as Lam US 6630416 at the time this invention was made, or was subject to a joint research agreement at the time this invention was made. However, reference US 6630415 additionally qualifies as prior art under another subsection of 35 U.S.C. 102, and therefore, is not disqualified as prior art under 35 U.S.C. 103(c).

Applicant may overcome the applied art either by a showing under 37 CFR 1.132 that the invention disclosed therein was derived from the invention of this application, and is therefore, not the invention "by another," or by antedating the applied art under 37 CFR 1.131.

### ***Double Patenting***

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

9. Claim 1, 2, 4, 6, 8-19 rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 1-22 of U.S. Patent No. 6630416. Although the conflicting claims are not identical, they are not patentably distinct from each other because they both claim a friction material comprising a fibrous base material comprising a porous primary layer and one secondary layer. The current application claims a secondary layer with friction modifying particles of silica and carbon and the patent teaches the use of silica and carbon as friction modifying particles. The composition claimed in the current application is obvious over the US Patent. Both application and patent have a common assignee.



***Response to Arguments***

10. Office Action claims 4 and 5 were rejected under 35 USC 112 second paragraph and have been amended to rescind this rejection.

11. Claim 5 and 7 objected to due to minor informalities. Appropriate corrections are complete and the objection is overcome.

12. Applicant's amendment to claim 1 has been considered and addressed in this office action. Applicant's arguments with respect to claim 1 and US Patent 5998307 have been considered but are moot in view of the new ground(s) of rejection. Examiner accepts that the mixture and the composition of the mixture of silica and carbon friction modifying particles are not disclosed in Lam '307.

13. Applicant's arguments filed about Chen '416 have been considered but are moot in view of the new ground(s) of rejection. Chen '416 102(e) rejection has been removed based on new amended claim 1. However, Chen '416 is owned by a common assignee and claims an invention that is not patentably distinct from the current application and is being rejected on the grounds of Obviousness Double Patenting.

14. Applicant's arguments filed about the declaration submitted under 37 CFR 1.132 have been fully considered but they are not persuasive. The arguments and the declaration have been fully considered and the amendment to claim 1 changes the rejection from a 102(f) to a 103 based on prior art that qualifies under 102(f), but that the rejection is maintained because the declaration states that the instant inventors derived their invention from the inventors of the '416 patent. Applicant needs to resolve the

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issue of inventorship. One way to do this is to file an affidavit/declaration stating that they invented the subject matter claimed and did not derive the invention from the inventors of the '416 patent.


15. Applicant's arguments that the specific friction material defined by the rejected claims is different than what is taught by the '416 patent and these claims are patentably distinct are not persuasive. As stated in the current Office Action, Chen does not teach the composition of the friction particles in the secondary layer, however, the Chen claim 5 teaches friction modifying particles comprising silica particles; resin powders; carbonized carbon powder or particles and mixtures thereof; and mixtures thereof. The reference is silent with respect to the amount of each. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have employed a mixture because Chen teaches friction-modifying particles in the secondary layer, and teaches that silica and carbon and mixtures thereof are suitable for use as friction modifying particles. One of ordinary skill in the art would have been motivated to employ a mixture because Chen teaches the advantages of silica and carbon as friction modifying particles. It further would have been obvious to select the appropriate amounts of the two particles through the process of routine experimentation to obtain optimum friction properties.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer Steele whose telephone number is 571-272-7115. The examiner can normally be reached on Office Hours Mon-Fri 8AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on (571) 272-1478. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
ELIZABETH M. COLE  
PRIMARY EXAMINER